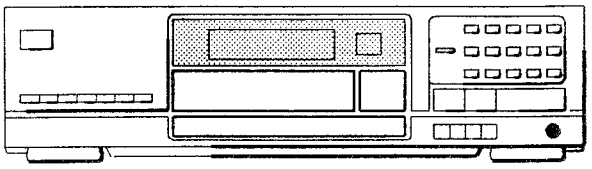
S/M Code No.91 - 021 DATE OF ISSUE 3/1991 - T

AIWA®

XC-500

SERVICE MANUAL



COMPACT DISC PLAYER

• BASIC CD MECHANISM : KSL — 210AFM • TYPE. H,E,K

SPECIFICATIONS

Type:	Compact disc digital audio system
Disc:	Compact disc
Scanning method:	Non contact optical scanner (semiconductor laser application)
Laser:	Semiconductor laser (λ=780 nm)
Rotation speed:	Approx. 500 rpm-200 rpm (CLV)
Error correction:	Cross Interleave, Reed-Solomon Code
No. of channels:	2 channels
D-A conversion:	1 bit
Frequency response:	4 Hz-20 kHz ±0.5 dB
Harmonic distortion:	0.0035% (1 kHz)
Dynamic range:	96 dB
Channel separation:	96 dB (1 kHz)
S/N Ratio:	100 dB (A)
Wow/Flutter:	Unmeasurable
Outputs:	ANALOG OUT Phono jack Maximum output level: 2 V (10 k ohms) Load impedance: more than 10 k ohms DIGITAL OUT (OPTICAL) Optical output connector Output level: −18 ± 3 dBm Light wave length: 660 nm PHONES Stereo phone jack Maximum output level: 4 mW or more Load impedance: 32 ohms

• Design and specifications are subject to change without notice.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

DISASSEMBLY INSTRUCTIONS

1. "Tray" Removal (See Figure – 1)
   1) Remove the "Cabinet, Steel" .
   2) ●For AUTOMATIC operation
      Press the OPEN/CLOSE button to eject the "Tray".
      ●For MANUAL operation
      Insert a flat – head screwdriver into the hole at the bottom of the set and turn the cam in the direction of the arrow to eject the "Tray".
      (See Figure – 1)
   3) Loosen 2 screws Ⓐ and pull out the "Tray" toward you. (See Figure – 2)

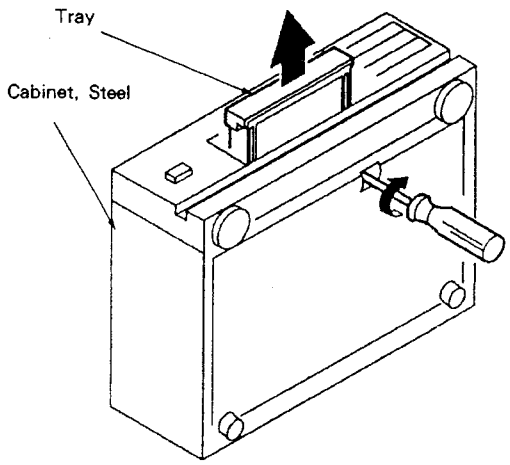


Fig – 1

2. "CD Mechanism" Removal (See figure – 2)
   1) Loosen 2 screws Ⓐ and remove the "Tray" ,remove 3 screws Ⓑ and remove "CD Mechanism" .

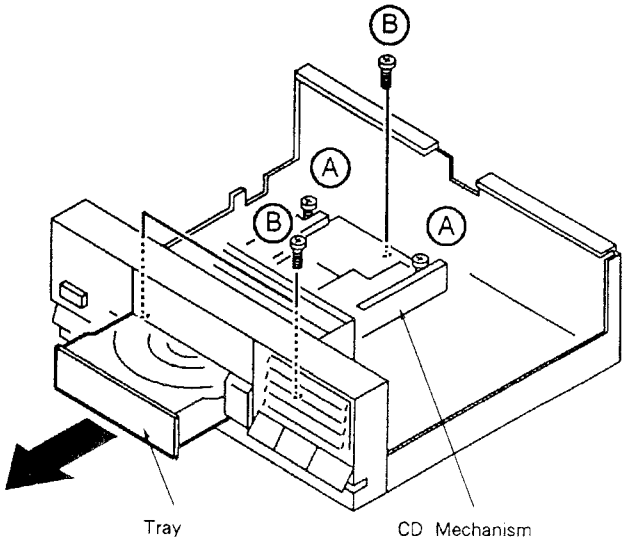


Fig – 2

■ ACCESSORIES/PACKAGE LIST

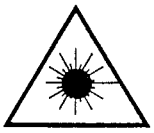
PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q,TY
	1	★80-AC4-901-018	INSTRUCTION BOOKLET EX (E,K)	※	1
	1	★80-AC4-902-019	INSTRUCTION BOOKLET H (H)	※	1
	2	★87-034-773-010	CORD,PIN R237W – 1M (E,K)		1
	2	★87-034-786-019	CORD,PIN (H)		1
	3	★89-AC3-952-019	REMOTE CONTROLLER RC – C103 YB	※	1

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

ADVARSEL!



Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

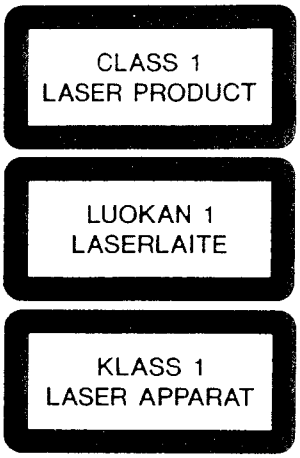
VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

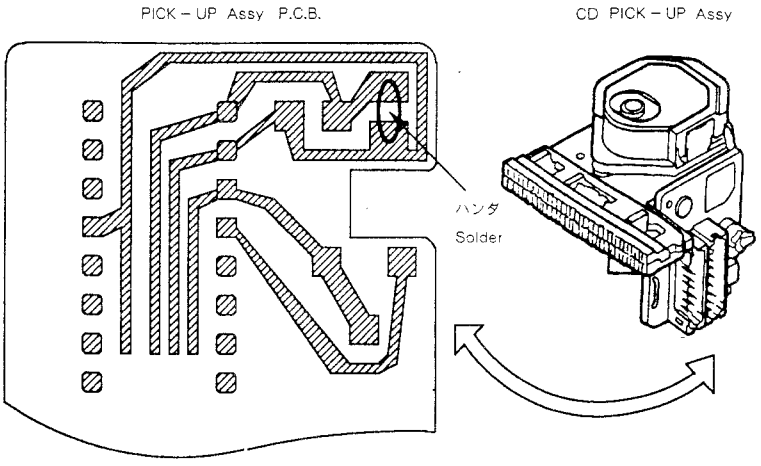
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block (KSS – 210A)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in figure below.



ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
===IC===		
	87-001-440-019	IC, BA15218N
	87-001-184-010	IC, CXA1081S
	87-001-400-010	IC, CXA1082BS
	87-001-944-010	IC, CXD1167Q
	80-AC4-608-010	IC, CXP50112-198Q
	87-002-211-010	IC, GPIF32T(DIGITAL OUT)
	87-001-486-010	IC, ICP-N15
	87-001-173-010	IC, LA6510
	87-002-249-010	IC, MN6474M
	87-001-596-010	IC, NJM4580L
	87-020-903-010	IC, NJM7805FA
	87-001-641-010	IC, NJM79M05FA
	87-020-910-019	IC, PST523F
	87-001-790-010	IC, SBX1610-52(REMOTE SENSOR)
	87-001-169-010	IC, STA341M
===TRANSISTOR===		
	89-213-292-010	TRANSISTOR, 2SB1329Q
	89-213-321-019	TRANSISTOR, 2SB1332R
	89-318-154-019	TRANSISTOR, 2SC1815Y
	87-026-500-010	TRANSISTOR, 2SD2144S, UV
	87-026-219-019	TRANSISTOR, DTA144ES
	87-026-464-010	TRANSISTOR, DTC114TS
	87-026-218-010	TRANSISTOR, DTC144ES
===DIODE===		
	87-027-376-019	DIODE, 1B4B41
	87-001-574-010	DIODE, 1SR139-200
	87-020-110-010	DIODE, 1SS177
	87-001-187-010	DIODE, S5277B LC6
	87-027-661-019	DIODE, ZENER HZ30-2L
	87-027-393-010	DIODE, ZENER HZ4C2
	87-027-555-010	DIODE, ZENER HZ5C2
===MAIN CIRCUIT BOARD SECTION===		
C101	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C102	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C103	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C104	★87-018-119-019	CAP, CERA-SOL U 100P-50 B
C105	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C106	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C107	★87-010-404-019	CAP, ELECT 4.7-50V SME
C108	★87-010-404-019	CAP, ELECT 4.7-50V SME
C109	★87-010-401-019	CAP, ELECT 1-50V SME
C111	★87-010-400-019	CAP, ELECT 0.47-50V SME
C112	★87-018-133-019	CAP, CERA-SOL U 4700P-16 X
C113	★87-010-374-019	CAP, ELECT 47-10V
C114	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C115	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C116	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C117	★87-010-370-019	CAP, ELECT 330-6.3V SME
C118	★87-010-408-019	CAP, ELECT 47-50V SME
C119	★87-010-370-019	CAP, ELECT 330-6.3V SME
C132	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C134	★87-010-404-019	CAP, ELECT 4.7-50V SME
C135	★87-018-131-019	CAP, CERA-SOL U 1000P-50 B
C141	★87-010-374-019	CAP, ELECT 47-10V
C151	★87-018-132-019	CAP, CERA-SOL U 2200P-16 X
C152	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C153	★87-018-127-019	CAP, CERA-SOL U 470P-50 B
C156	★87-010-403-019	CAP, ELECT 3.3-50V SME
C157	★87-010-545-019	CAP, ELECT 0.22-50V SME
C159	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C160	★87-010-404-019	CAP, ELECT 4.7-50V SME
C161	★87-010-374-019	CAP, ELECT 47-10V
C162	★87-010-374-019	CAP, ELECT 47-10V
C164	★87-010-374-019	CAP, ELECT 47-10V
C165	★87-010-131-019	CAP, ELECT 0.47-50V BP
C167	★87-018-202-019	CAP, CERA-SOL U 6800P-16 X
C168	★87-018-202-019	CAP, CERA-SOL U 6800P-16 X
C171	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C172	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C173	★87-010-263-019	CAP, ELECT 100-10V
C174	★87-018-131-019	CAP, CERA-SOL U 1000P-50 B
C175	★87-010-405-019	CAP, ELECT 10-50V SME
C176	★87-018-103-019	CAP, CERA-SOL U 8.2P-50 SL
C177	★87-018-132-019	CAP, CERA-SOL U 2200P-16 X
C178	★87-010-265-019	CAP, ELECT 33-16V SME
C179	★87-010-384-019	CAP, ELECT 100-25V SME
C180	★87-010-265-019	CAP, ELECT 33-16V SME
C181	★87-010-374-019	CAP, ELECT 47-10V
C182	★87-010-374-019	CAP, ELECT 47-10V
C183	★87-010-374-019	CAP, ELECT 47-10V
C191	★87-010-400-019	CAP, ELECT 0.47-50V SME
C192	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C193	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C301	★87-018-143-019	CAP, CERA-SOL U 4.7P-50 CH
C302	★87-018-143-019	CAP, CERA-SOL U 4.7P-50 CH
C304	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C305	★87-010-374-019	CAP, ELECT 47-10V
C307	★87-018-113-019	CAP, CERA-SOL U 33P-50 SL
C308	★87-018-131-019	CAP, CERA-SOL U 1000P-50 B
C311	★87-018-116-019	CAP, CERA-SOL U 56P-50 SL
C312	★87-018-116-019	CAP, CERA-SOL U 56P-50 SL
C313	★87-018-116-019	CAP, CERA-SOL U 56P-50 SL
C314	★87-018-116-019	CAP, CERA-SOL U 56P-50 SL
C315	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C316	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C317	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C318	★87-018-115-019	CAP, CERA-SOL U 47P-50 SL
C321	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C322	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C323	★87-014-069-019	CAP, PP 330P-100 J
C324	★87-014-069-019	CAP, PP 330P-100 J
C325	★87-014-043-010	CAP, PP 270P-100 J
C326	★87-014-043-010	CAP, PP 270P-100 J
C327	★87-010-914-010	CAP, ELECT 47-10V BP ASF
C328	★87-010-914-010	CAP, ELECT 47-10V BP ASF
C333	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C334	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C351	★87-010-381-019	CAP, ELECT 330-16V SME
C352	★87-010-381-019	CAP, ELECT 330-16V SME
C353	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C354	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C355	★87-010-374-019	CAP, ELECT 47-10V
C356	★87-010-374-019	CAP, ELECT 47-10V
C357	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C358	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C359	★87-010-374-019	CAP, ELECT 47-10V
C360	★87-010-374-019	CAP, ELECT 47-10V
C361	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C362	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C363	★87-010-374-019	CAP, ELECT 47-10V
C364	★87-010-374-019	CAP, ELECT 47-10V
C401	★87-010-124-019	CAP, ELECT 4700-16V
C402	★87-015-997-019	CAP, ELECT 2200-16V SME
C403	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C404	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C405	★87-010-263-019	CAP, ELECT 100-10V
C406	★87-010-263-019	CAP, ELECT 100-10V
C407	★87-010-410-019	CAP, ELECT 330-50V SME
C408	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C409	★87-018-209-019	CAP, CERA-SOL U 0.1-50 F
C410	★87-010-235-019	CAP, ELECT 470-16V SME
C411	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y

REF. NO.	PART NO.	DESCRIPTION
EM101	★87-008-372-010	FILTER, EMI BL OIRNI
EM102	★87-008-372-010	FILTER, EMI BL OIRNI
EM103	★87-008-372-010	FILTER, EMI BL OIRNI
EM104	★87-008-372-010	FILTER, EMI BL OIRNI
EM301	★87-008-372-010	FILTER, EMI BL OIRNI
EM303	★87-008-372-010	FILTER, EMI BL OIRNI
EM304	★87-008-372-010	FILTER, EMI BL OIRNI
J101	★87-009-052-019	JACK PIN 2P(ANALOG OUT)
J102	87-002-211-010	IC, GPIF32T(DIGITAL OUT)
L101	★87-003-136-019	COIL, 100UH
L401	★87-003-136-019	COIL, 100UH
R116	★87-025-429-010	RES, M/F 47K-1/6W F
R117	★87-025-429-010	RES, M/F 47K-1/6W F
SFR101	★87-024-169-010	SFR 2.2K
SFR151	★87-024-173-010	SFR 22K
SFR152	★87-024-173-010	SFR 22K
SFR153	★87-024-173-010	SFR 22K
SFR154	★87-024-173-010	SFR 22K
X301	★87-030-227-010	VIB, X'TAL 33.8688MHz
		===FRONT-1 CIRCUIT BOARD SECTION===
FL201	89-AC3-609-010	FL, FV401G(DISPLAY)
SW201	87-036-142-010	TACT SW(1)
SW202	87-036-142-010	TACT SW(2)
SW203	87-036-142-010	TACT SW(3)
SW204	87-036-142-010	TACT SW(4)
SW205	87-036-142-010	TACT SW(5)
SW206	87-036-142-010	TACT SW(6)
SW207	87-036-142-010	TACT SW(7)
SW208	87-036-142-010	TACT SW(8)
SW209	87-036-142-010	TACT SW(9)
SW210	87-036-142-010	TACT SW(10)
SW211	87-036-142-010	TACT SW()10)
SW212	87-036-142-010	TACT SW(PRGM)
SW213	87-036-142-010	TACT SW(CHECK)
SW214	87-036-142-010	TACT SW(DELETE)
SW215	87-036-142-010	TACT SW(AC)
SW216	87-036-142-010	TACT SW(STOP ■)
SW217	87-036-142-010	TACT SW(PAUSE ❚❚)
SW218	87-036-142-010	TACT SW(PLAY ▶)
SW219	87-036-142-010	TACT SW(SKIP ⏮)
SW220	87-036-142-010	TACT SW(SKIP ⏭)
SW221	87-036-142-010	TACT SW(SEARCH ◀◀)
SW222	87-036-142-010	TACT SW(SEARCH ◀◀)
SW223	87-036-142-010	TACT SW(OPEN/CLOSE ⏏)
		===FRONT-2 CIRCUIT BOARD SECTION===
SW224	87-036-142-010	TACT SW(TIME)
SW225	87-036-142-010	TACT SW(BLANK)
SW226	87-036-142-010	TACT SW(RANDOM)
SW227	87-036-142-010	TACT SW(INDEX◢—)
SW228	87-036-142-010	TACT SW(INDEX—◣)
SW229	87-036-142-010	TACT SW(REPEAT 1/ALL)
		===AC SW CIRCUIT BOARD SECTION===
⚠C421	★87-019-113-010	CAP, FILM SG 2200P-400(FMG)
⚠SW401	★87-036-015-010	PUSH SW(POWER)
		===HP CIRCUIT BOARD SECTION===
C391	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C392	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
C393	★87-018-134-019	CAP, CERA-SOL U 0.01-16 Y
EM391	★87-008-372-010	FILTER, EMI BL OIRNI
EM392	★87-008-372-010	FILTER, EMI BL OIRNI
EM393	★87-008-372-010	FILTER, EMI BL OIRNI
J391	87-009-203-010	JACK, 6.3 ST BLK, GLD(PHONES)

REF. NO.	PART NO.	DESCRIPTION
		===MOTOR-1 CIRCUIT BOARD SECTION===
※PCB-F	91-625-848-110	MOTOR-1 C.B(RF-310T-11400)
※PCB-F	91-628-263-110	MOTOR-1 C.B(MDN-4RA3NTAS/4RA3ETA)
※M1	9X-264-077-010	MOTOR GEAR ASSY(SLED) (RF-310T-11400)
※M1	9X-264-134-410	MOTOR GEAR ASSY(SLED)(MDN-4RA3ETA)
※M2	9X-264-133-710	MOTOR ASSY(W/CHASSIS, T.T)(SPINDLE) (RF-310T-11400)
※M2	9X-264-134-810	MOTOR ASSY(W/CHASSIS, T.T)(SPINDLE) (MDN-4RA3NTAS)
SW1	91-572-053-110	LEAF SW(INSIDE LIMIT)
		===MOTOR-2 CIRCUIT BOARD SECTION===
M3	9X-264-133-610	MOTOR ASSY(LOADING)
		===MISCELLANEOUS===
	98-848-127-310	OPTICAL PICK UP KSS-210A(S)(RP)
⚠	★87-034-749-019	AC CORD, H W/PLUG(H)
⚠	★87-034-781-018	AC CORD (E) (E)
⚠	★87-034-592-018	AC CORD (K) (K)
⚠	★87-085-184-010	BUSHING, AC CORD D(H)
⚠	★87-085-185-010	BUSHING, AC CORD E(E, K)
⚠PT401	80-AC4-605-019	POWER TRANSFORMER H(H)
⚠PT401	80-AC4-603-018	POWER TRANSFORMER EZ(E)
⚠PT401	80-AC4-604-019	POWER TRANSFORMER K(K)
SW2	91-572-052-110	LEAF SW(OPEN/CLOSE)
⚠SW402	87-036-162-019	ROTARY SW(AC VOLTAGE)(H)

※Caution

Two Types of the spindle (DISC) motor and sled motor are used, but they are not compatible.
Check the part numbers (MDN ····, RF ····) on the labels of motors and replace motors with the same one.

IC DESCRIPTION

IC, CXP50112 – 198Q

Pin No.	Pin Name	I/O	Description
1	EMP	O	Deemphasis control terminal
2~4	NC	—	Not connected
5~15	Seg a~k	O	FL segment signal terminal
16	NC	—	Not connected
17~28	G1~12	O	FL grid signal
29	SCOR	I	Subcode sync S0 + S1 input terminal
30	TX	O	Not connected
31	TEX	I	Connected to VDD
32	$\overline{\text{RST}}$	I	Reset input terminal
33	NC	—	Not connected
34	V_{DD}	—	+5 V power supply terminal
35~38	KEY 0~3	I	Key matrix input terminal
39~41	NC	—	Not connected
42	$\overline{\text{LDON}}$	O	Laser diode ON/OFF control terminal
43	WDCK	I	88.2 KHz input terminal
44	SQCK	O	Subcode Q read-in clock output terminal
45	NC	—	Not connected
46	SUBQ	I	Subcode Q input terminal
47	PCSW	I	Connected to GND
48	FOK	I	FOK input terminal
49	$\overline{\text{SW CLOSE}}$	I	Tray close switch input terminal
50	$\overline{\text{SW OPEN}}$	I	Tray open switch input terminal
51	OPEN	O	Tray open output terminal
52	CLOSE	O	Tray close output terminal
53	NC	—	Not connected
54	$\overline{\text{A MUTE}}$	O	Audio mute signal output terminal
55	MUTG	O	Digital mute signal output terminal
56	$\overline{\text{XRST}}$	O	System reset signal output terminal
57	DATA	O	Servo control data output terminal
58	XLT	O	Pin 57's data latch signal terminal
59	CLK	O	Pin 57's data transfer clock terminal
60	NC	—	Not connected
61	NC	—	Not connected
62	RMC	I	Remote control signal input terminal
63	SENS	I	Sense input terminal
64	GFS	I	Frame sync lock signal input terminal
65	NC	I	Connected to GND
66, 67	NC	—	Not connected

Pin No.	Pin Name	I/O	Description
68	NC	—	Not connected
69	NC	—	Not connected
70	NC	—	Not connected
71	Vss	—	Connected to GND
72	XTAL	—	Not connected
73	NC	I	Connected to VDD
74	EXTAL	I	System clock input terminal
75	VREF	I	Connected to +5 V power
76	VP	I	Pull down (built-in) resistor power supply terminal
77	FBZ	O	Offset cancel signal terminal on focus-searching
78～80	NC	—	Not connected

IC, CXD1167Q

Pin No.	Pin Name	I/O	Description
1	FSW	O	Output to switch the time constant of the spindle motor output filter.
2	MON	O	Spindle motor on/off control output.
3	MDP	O	Spindle motor drive output. Coarse control in the CLV.S mode and phase control in the CLV.P mode.
4	MDS	O	Spindle motor drive output. Speed control in the CLV.S mode.
5	EFM	I	Inputs an EFM signal from the RF amplifier.
6	ASY	O	Output to control the slice level of the EFM signal.
7	LOCK	O	The GFS signal is sampled by the WFCK/16. When the GFS signal is "H", this pin outputs "H", and when the signal is "L" 8 times continuously, it outputs "L".
8	VCOO	O	VCO output. When this is locked to the EFM signal. f = 8.6436MHz
9	VCOI	I	VCO input.
10	TEST	—	Connected to GND. (0V)
11	PDO	O	Phase comparison output between the EFM signal and VCO/2.
12	VSS	—	Connected to GND. (0V)
13	CLK	I	Inputs a clock signal for the serial data transfer from CPU. Latches data at the rise of the clock signal.
14	XLT	I	Latch input from CPU. Latches 8-bit shift register data (serial data from CUP) to each register.
15	DATA	I	Inputs serial data from CPU.
16	$\overline{\text{XRST}}$	I	System reset input. The system is reset at "L" input.
17	CNIN	I	Tracking pulse input.
18	SENSE	O	Outputs the internal state according to the address.
19	MUTG	I	Muting input. When the ATTM in the internal register is "L", the system is in the normal state if the MUTG is "L" and the sound is muted if the MUTG is "H".
20	CRCF	O	Outputs the CRC checking result of sub-code Q. (Reserved)
21	EXCK	I	Clock input for the sub-code serial output. (Connected to GND)
22	SBSO	O	Sub-code serial output. (Reserved)
23	SUBQ	O	Sub-code Q output.
24	SCOR	O	Sub-code sync S0 + S1 output.
25	SQCK	I/O	Clock signal for reading of sub-code Q.
26	SQEX	I	SQCK select input. (Connected to +5V)
27	DOTX	O	Digital audio interface output.
28	GFS	O	Display output of the frame sync locking state. Goes "H" when locked.
29 ~ 32	TEST (DB08) ~ TEST (DB05)	—	Connected to +5V. (Do not open.) Data terminal of external RAM.
33	VDD	—	Power supply (+5V)
34 ~ 37	TEST (DB04) ~ TEST (DB01)	—	Connected to +5V. (Do not open.) Data terminal of the external RAM.
38 ~ 40	TEST (RA01) ~ TEST (RA03)	—	Connected to +5V. (Do not open.) and external RAM address output.

Pin No.	Pin Name	I/O	Description
41 〜 48	TEST (RA04) 〜 TEST (RA11)	—	Connected to GND. (Do not open.) Address output of the external RAM.
49	TEST ($\overline{\text{RAWE}}$)	—	Connected to GND.
50	TEST ($\overline{\text{RACS}}$)	—	Connected to GND.
51	C4M	O	1/2 division output of the crystal oscillator. f = 4.2336MHz(Reserved)
52	VSS	—	Connected to GND. (0V)
53	XTAI	I	Crystal oscillator input. f = 8.4672MHz
54	XTAO	O	Crystal oscillator output. f = 8.4672MHz (Reserved)
55	MD1	I	Mode select input 1 used at "H" Mode select input 2 used at "L" Mode select input 3 used at "L" (MD1, 2:connected to GND) (MD3 :connected to +5V) Used in the mode with the clock frequency 8.4672MHz, the digital output OFF. the digital filter ON.
56	MD2	I	
57	MD3	I	
58	SLOB	I	Input to switch the code of the audio data output. "L" causes the 2 second complement output and "H" causes the offset binary output. (Connected to GND.)
59	PSSL	I	Input to switch the mode of the audio data output. "L" causes serial output and "H" causes parallel output. (Connected to GND.)
60	APTR	O	Aperture correction control output. 44.1kHz with the filter OFF. (Reserved)
61	APTL	O	Aperture correction control output. 44.1kHz with the filter OFF. (Reserved)
62	DA01 (C1F1)	O	DA01(LSB of parallel audio data) output with PSSL = "H". C1F1 output with PSSL = "L". (Reserved)
63	DA02 (C1F2)	O	DA02 output with PSSL = "H". C1F2 output with PSSL = "L". (Reserved)
64	DA03 (C2F1)	O	DA03 output with PSSL = "H". C2F1 output with PSSL = "L". (Reserved)
65	DA04 (C2F2)	O	DA04 output with PSSL = "H". C2F2 output with PSSL = "L". (Reserved)
66	DA05 (C2FL)	O	DA05 output with PSSL = "H". C2FL output with PSSL = "L". (Reserved)
67	DA06 (C2PO)	O	DA06 output with PSSL = "H". C2PO output with PSSL = "L". (Reserved)
68	DA07 (RFCK)	O	DA07 output with PSSL = "H". RFCK output with PSSL = "L". (Reserved)
69	DA08 (WFCK)	O	DA08 output with PSSL = "H". WFCK output with PSSL = "L". (Reserved)
70	DA09 ($\overline{\text{PLCK}}$)	O	DA09 output with PSSL = "H". PLCK output with PSSL = "L". (Note 1)(Reserved)
71	DA10 (VGFS)	O	DA10 output with PSSL = "H". VGFS output with PSSL = "L". (Reserved)
72	DA11 (GTOP)	O	DA11 output with PSSL = "H". GTOP output with PSSL = "L". (Reserved)
73	VDD	—	Power supply (+5V)
74	DA12 ($\overline{\text{RA0V}}$)	O	DA12 output with PSSL = "H". RA0V output with PSSL = "L". (Reserved)
75	DA13 (C4LR)	O	DA13 output with PSSL = "H". C4LR output with PSSL = "L". (Reserved)
76	DA14 (C210)	O	DA14 output with PSSL = "H". C210 output with PSSL = "L".
77	DA15 ($\overline{\text{C210}}$)	O	DA15 output with PSSL = "H". C210 output with PSSL = "L". (Note 2)(Reserved)
78	DA16 (DATA)	O	DA16(MSB of parallel audio data) output with PSSL = "H". DATA output with PSSL = "L". (Note 3)
79	WDCK	O	Strobe signal output. 88.2kHz with the filter OFF.
80	LRCK	O	Strobe signal output. 44.1kHz with the filter OFF.

Note 1) $\overline{\text{PLCK}}$: VCO/2 output. When locked to the EFM signal. f = 4.3218MHz
Note 2) C210: Bit clock signal. f = 2.1168MHz
Note 3) DATA: Audio signal serial data output

IC, CXA1082BS

Pin No.	Pin Name	I/O	Description
1	DVEE	–	-5V terminal.
2	DFCT	I	Interface input terminal for microcomputer.
3	TE	I	Tracking error signal input terminal.
4	TZC	I	Tracking zero-cross comparator input terminal.
5	ATSC	I	ATSC detection window comparator input terminal.
6	FE	I	Focus error signal input terminal.
7	VC	–	Connected to GND.
8	FGD	O	Capacitor is inserted between this pin and pin 3 to decrease the focus servo's high-frequency gain.
9	FS3	I	Focus servo's high-frequency gain is selected by FS3 on/off operation.
10	FLB	O	Time-constant external terminal for raising the focus servo's low-frequency range.
11	FEO	O	Power transistor drive's operational amplifier output terminal.
12	FE–	I	Focus amplifier inversion input terminal.
13	SRCH	O	Time-constant external terminal for forming a focus search wave.
14	TG0	O	Time-constant external terminal for tracking high-frequency gain selection.
15	TG2	O	Time-constant external terminal for tracking high-frequency gain selection.
16	AVCC	–	+5V terminal.
17	TAO	O	Tracking error signal output terminal.
18	TA–	I	Tracking amplifier's inversion input terminal.
19	SL+	I	Threading amplifier's noninversion input terminal.
20	SLO	O	Threading amplifier output terminal.
21	SL–	I	Threading amplifier's inversion input terminal.
22	SSTOP	I	On/off detection signal terminal of disc's innermost detection limit switch
23	FSET	I	Terminal for setting the focus tracking's phase compensation peak and CLV LPF (f0).
24	SENS	O	Outputs IC's internal state corresponding to data address (It is changed according to address of internal serial register.)
25	AVEE		-5V terminal
26	C. OUT	O	Outputs signal for counting number of tracks in high-speed mode.
27	DIRCT	I	Used in one-track jump. Normally "H". "L" when track jump pulse is inversed. Consequently "H" when normal tracking mode is set. "L" in a period when the rising and falling edges of TZC are detected.
28	$\overline{\text{XRST}}$	I	"L" when all the internal register are cleared.
29	DATA	I	Serial data transmission from CPU. Input started from LSB.
30	XLT	I	"L" when data of internal serial shift register is transmitted to the latch address-decoded.
31	CLK	I	DATA transmission clock. Data is taken in at the falling edge.
32	D GND	–	GND terminal.
33	BW	I	Loop filter's time-constant external terminal.
34	PDI	I	CXD1167Q phase comparator output PDO input terminal.

Pin No.	Pin Name	I/O	Description
35	ISET	I	Passes a current to determine the focus search, tracking jump, and threading kick height.
36 37	VCOF 3.5V	I	VCO's free-running frequency is proportional to the resistance value between this pin and pin 31.
38	C864	O	8.64MHz VCO output terminal.
39	LOCK	I	Connected to the LOCK terminal of CXD1167Q.
40	MDP	I	CXD1125 MDP connection terminal.
41	MON	I	CXD1125 MON connection terminal.
42	FSW	I	LPF time-constant external terminal of CLV servo's error signal.
43	DVCC	—	+5V terminal
44	SPDL-	I	Spindle drive amplifier's inversion input terminal.
45	SPDLO	O	Spindle motor drive terminal.
46	WDCK	I	Word clock signal input terminal.
47	FOK	I	Focus OK signal input terminal.
48	MIRR	I	Mirror signal input terminal

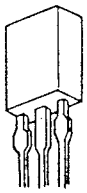
IC, CXA1081S

Pin No.	Pin Name	I/O	Description
1	RF1	I	The RF summing amplifier output is C-connected and input.
2	RF0	O	RF summing amplifier output. Eye pattern test point.
3	RF−	I	Inverting input of the RF summing amplifier. A feedback resistor is connected between pins 2 and 3.
4	P/N	I	Switches the input according to the polarity of the laser diode.
5	LD	O	Output to control the laser diode output.
6	PD	I	Connects the photo-detector which detects the laser diode output.
7	PD1	I	RF1-V amplifier (1) inverting input. Connected to PIN diode A + C for the current intput.
8	PD2	I	RF1-1 amplifier (2) inverting input. Connected to PIN diode B + D for the current input.
9	VC	I	Reference voltage input within the IC. Connected to pin 14 with single power supply. Connected to the ground with the positive and negative power supply.
10	F	I	F1-V amplifier inverting input. Connected to PIN diode F for the current input.
11	E	I	E1-V amplifier inverting input. Connected to PIN diode E for the current input.
12	EO	O	E1-V amplifier output. A feedback resistor is connected.
13	E1	I	Adjusts the E1-V amplifier gain.
14	VR	O	Outputs the neutral voltage. Connected to pin 9 with the single powersupply. OPEN with positive and negative power supply.
15	CC2	O	Defect bottom hold (1) output. A capacitor is connected between pins 15 and 16.
16	CC1	I	The defect bottom (1) output is C-connected and input.
17	VEE	−	Grounded with the single power supply. Becomes a negative power supply with the positive and negative power supply.
18	FE BIAS	I	Inputs a bias voltage for the positive-phase input of the focus error amplifier.
19	FE	O	Focus error amplifier output.
20	TE	O	Tracking error amplifier output.
21	DEFECT	O	Defect detection output. Outputs the "H" signal that detects a defect on the mirror surface.
22	MIRR	O	Mirror comparator output.
23	CP	O	A mirror hold capacitor is connected to this pin.
24	CB	O	The defect bottom hold (2) capacitor is connected to this pin.
25	DGND	−	Ground in the digital circuit.
26	ASY	I	Auto-symmetry control input.
27	EFM	O	EFM output comparator output.
28	FOK	O	Focus OK output.
29	$\overline{\text{LD ON}}$	I	Laser diode ON/OFF control input.
30	VCC	−	Positive power supply

IC, MN6474M

Pin No.	Pin Name	I/O	Description
1	MLD	I	Microcomputer command load input (Load when LOW). Connected to Vcc.
2	RSTB	I	Reset terminal (Reset when LOW)
3	IE	—	Signal processing LSI format when LOW. I²S format when HIGH. Connected to D-GND.
4	TP1	O	Digital filter test output terminal 1
5	TP2	O	Digital filter test output terminal 2
6	TEST1	I	Digital filter inspection test signal input terminal 1. Normally sets to "LOW". Connected to D-GND.
7	TEST2	I	Digital filter inspection test signal input terminal 2. Normally sets to "LOW". Connected to D-GND.
8	NC	—	Not connected.
9	NC	—	Not connected.
10	$AV_{DD}4$	—	Analog system power supply terminal 4 (Connected to +5 V power.)
11	OUTR (−)	O	Rch negative phase PWM output terminal
12	$AV_{SS}4$	—	Analog system ground terminal 4. Connected to D-GND.
13	$AV_{SS}3$	—	Analog system ground terminal 3. Connected to D-GND.
14	OUTR (+)	O	Rch positive phase PWM output terminal
15	$AV_{DD}3$	—	Analog system power sypply terminal 3 (Connected to +5 V power.)
16	NC	—	Not connected.
17	$AV_{DD}2$	—	Analog system power supply terminal 2 (Connected to +5 V power.)
18	OUTL (+)	O	Lch positive phase PWM output terminal
19	$AV_{SS}2$	—	Analog system ground terminal 2. Connected to D-GND.
20	$AV_{SS}1$	—	Analog system ground terminal 1. Connected to D-GND.
21	OUTL (−)	O	Lch negative phase PWM output terminal
22	$AV_{DD}1$	—	Analog system power supply terminal 1 (Connected to +5 V power.)
23	$DV_{DD}1$	—	Digital system power supply terminal 1 (Connected to +5 V.) (power supply for oscillator circuit)
24	$DV_{SS}1$	—	Digital system ground terminal 1 (ground for oscillator). Connected to D-GND.
25	X2	I	X'tal oscillator terminal
26	X1	I	X'tal oscillator terminal (External clock input terminal)
27	NC	—	Not connected
28	$DV_{DD}2$	—	Digital system power supply terminal 2 (Connected to +5 V power.)
29	$DV_{SS}2$	—	Digital system ground terminal 2. Connected to D-GND.
30	NSUB	—	Connected to D-VDD
31	ZFLGB	O	Zero input detection output terminal (Low when zero is detected. Not connected)
32	192FS	O	192FS (= 8.4672 MHz) output terminal. Not connected
33	LRPOL	I	LRCLK polarity switching input terminal
34	LRCLK	I	LRCLK input terminal. LR-POL: HIGH; HIGH: Lch data input; LOW: Rch data input LR-POL: LOW: LOW: Lch data input; HIGH: Rch data input
35	BCLK	I	Serial input bit clock

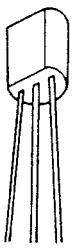
Pin No.	Pin Name	I/O	Description
36	SRDATA	I	Serial input data (digital) input terminal
37	$DV_{SS}3$	—	Digital system ground terminal 3. Connected to D-GND.
38	DV_{DD}	—	Digital system power supply terminal (comb potential fixture terminal) (Connected to +5 V power)
39	PD	I	Power down terminal (HIGH: Power down mode)
40	384FS	O	384FS (= 16.9344 MHz) output terminal
41	MDATA	I	Microcomputer command data input terminal (Connected to +5 V power)
42	MCLK	I	Microcomputer command clock input terminal (Connected to +5 V power)



BCE

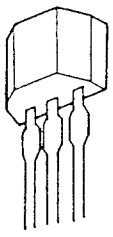
2SB1329

2SB1332



E C B

2SC1815



E C B

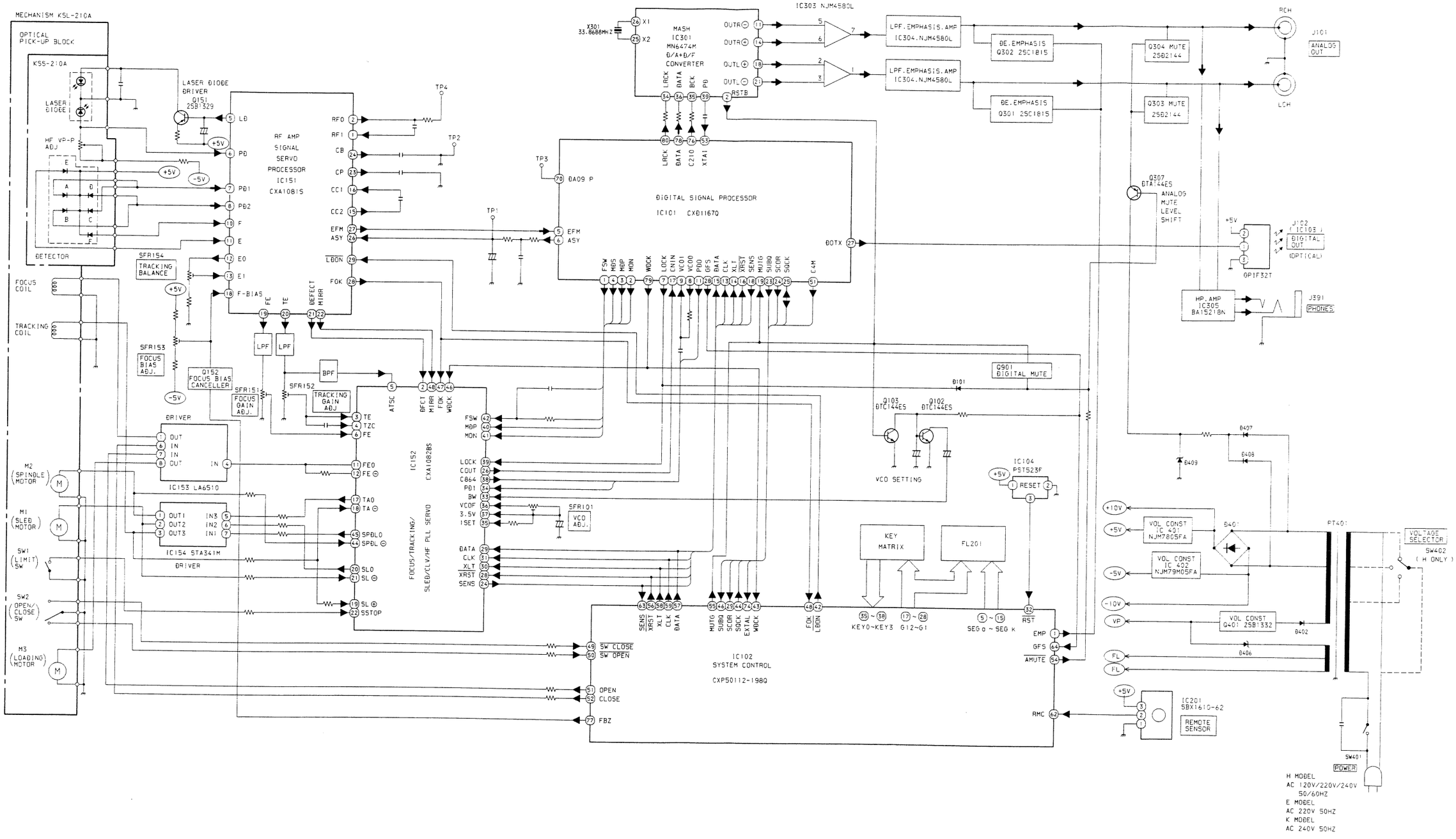
2SD2144

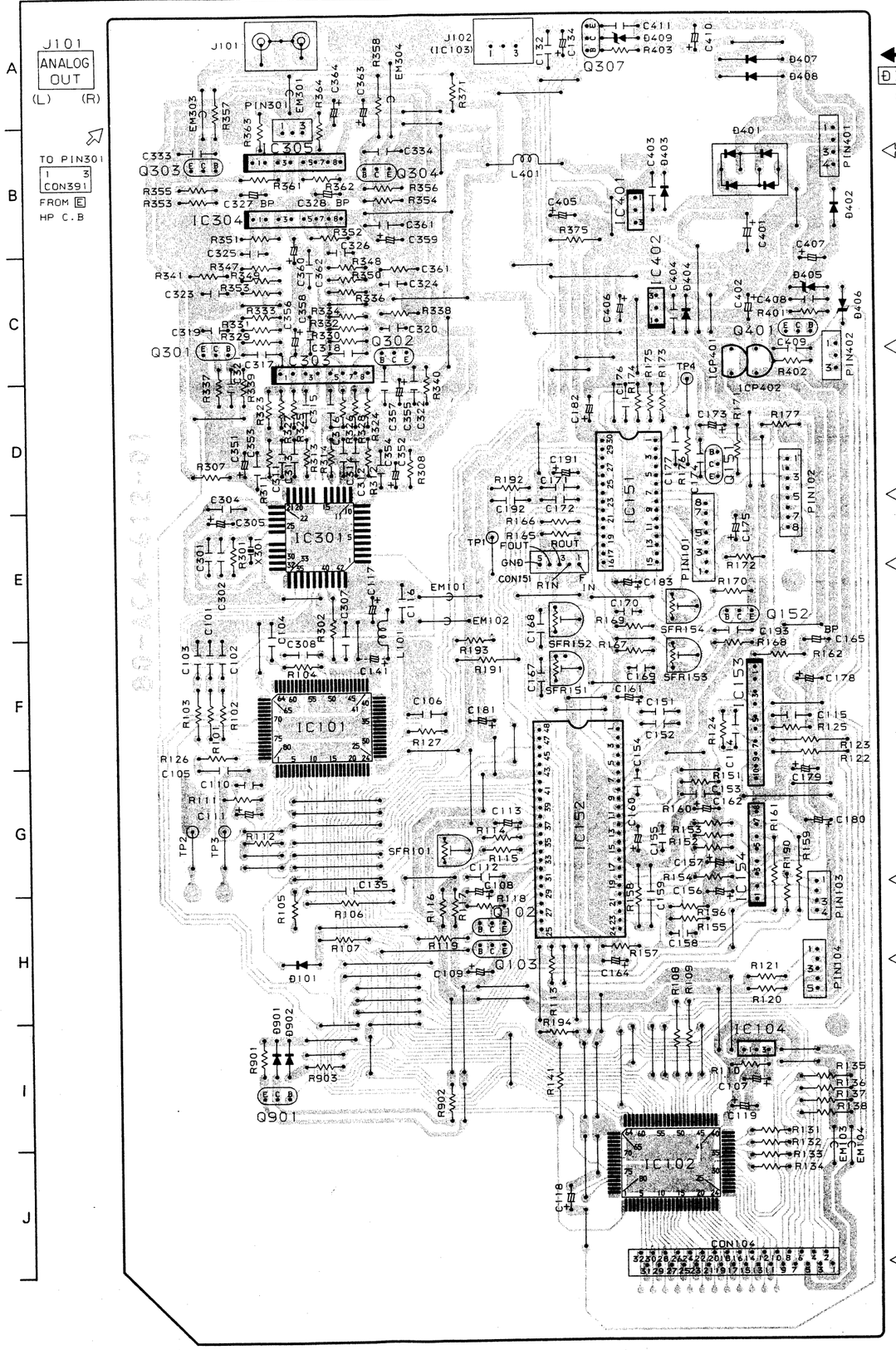
DTA144

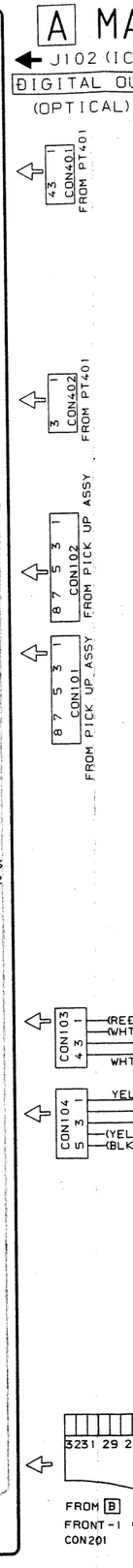
DTC114

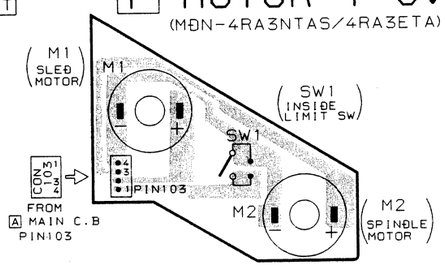
DTC144

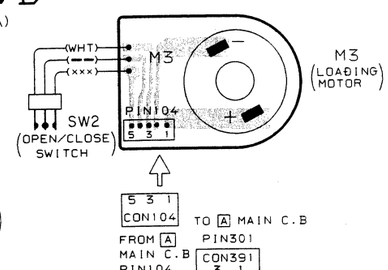
BLOCK DIAGRAM

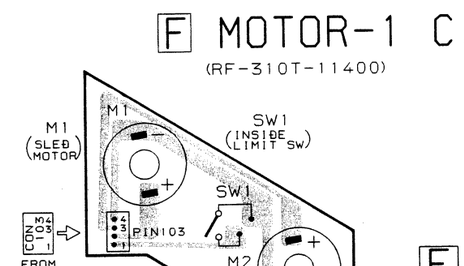


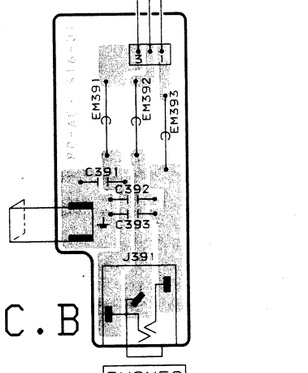


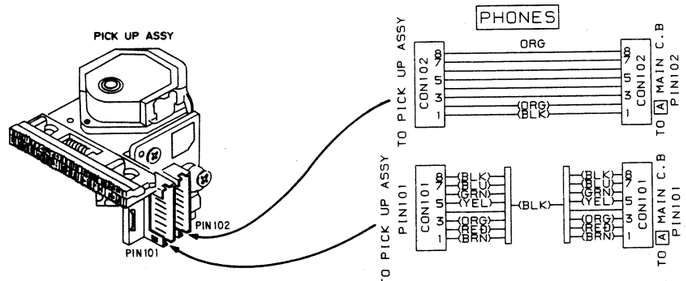


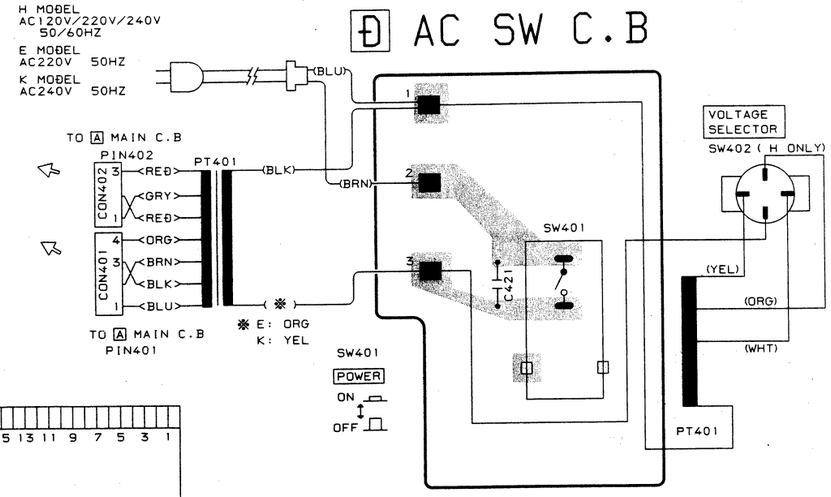








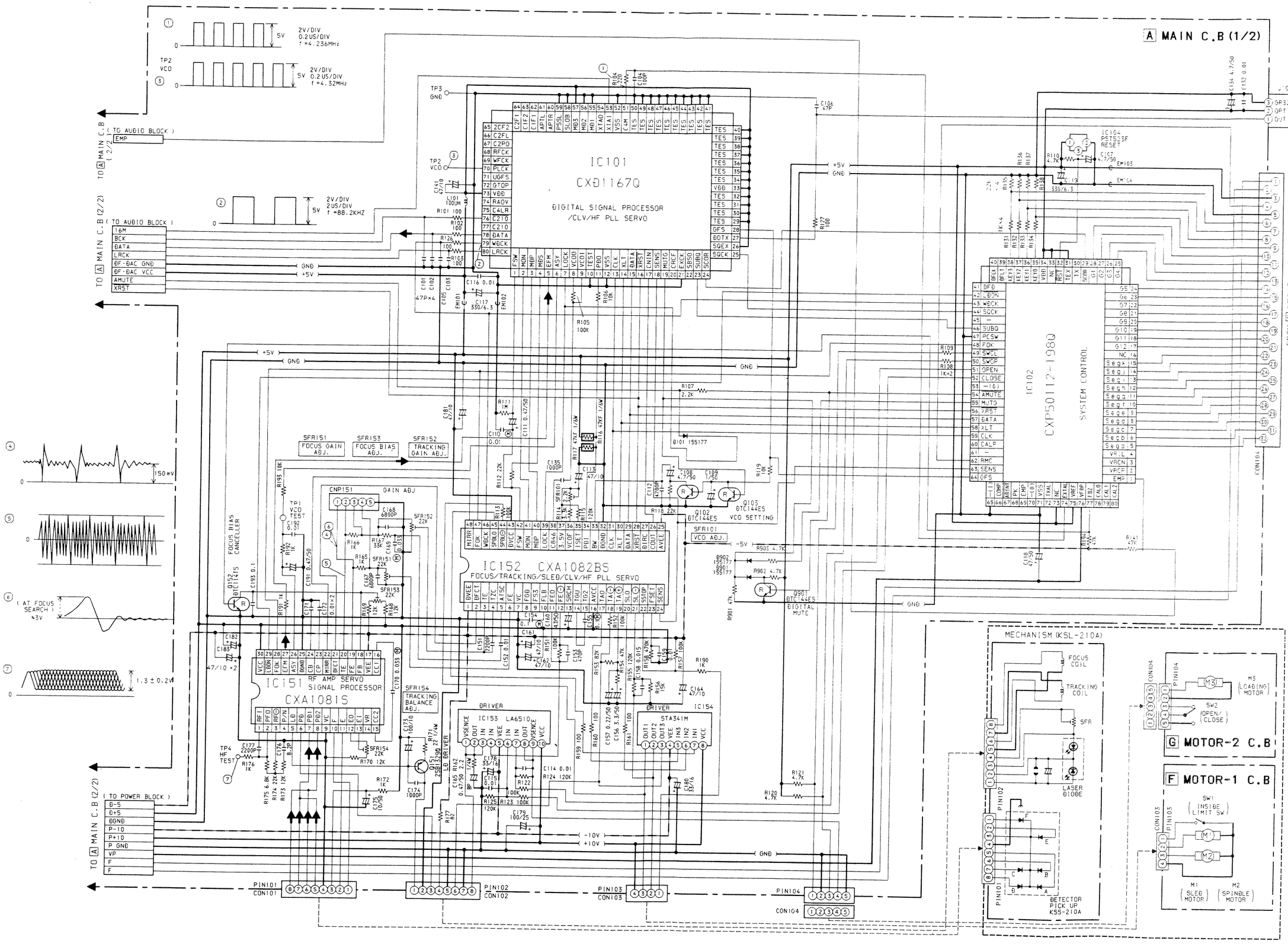




GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

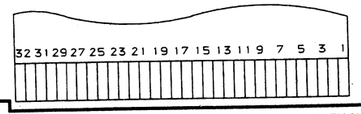
(プリント基板内のケミコンの極性表示はθ表示です。)

SCHEMATIC DIAGRAM – 1



B FRONT-1 C.B

FROM A MAIN C.B CON104



FL201
DISPLAY

IC201
REMOTE
SENSOR

C FRONT-2 C.B

SW205	SW204	SW203	SW202	SW201
5	4	3	2	1

SW215	SW209	SW208	SW207	SW206
10	9	8	7	6

SW205	SW214	SW213	SW212	SW211
AC	ÐELETE	CHECK	PRGM	>10

SW218
PLAY ▶

SW217
PAUSE ■■

SW216
STOP ■

SW223
OPEN/CLOSE ⏏

SEARCH
SW222 ▶▶
SW221 ◀◀

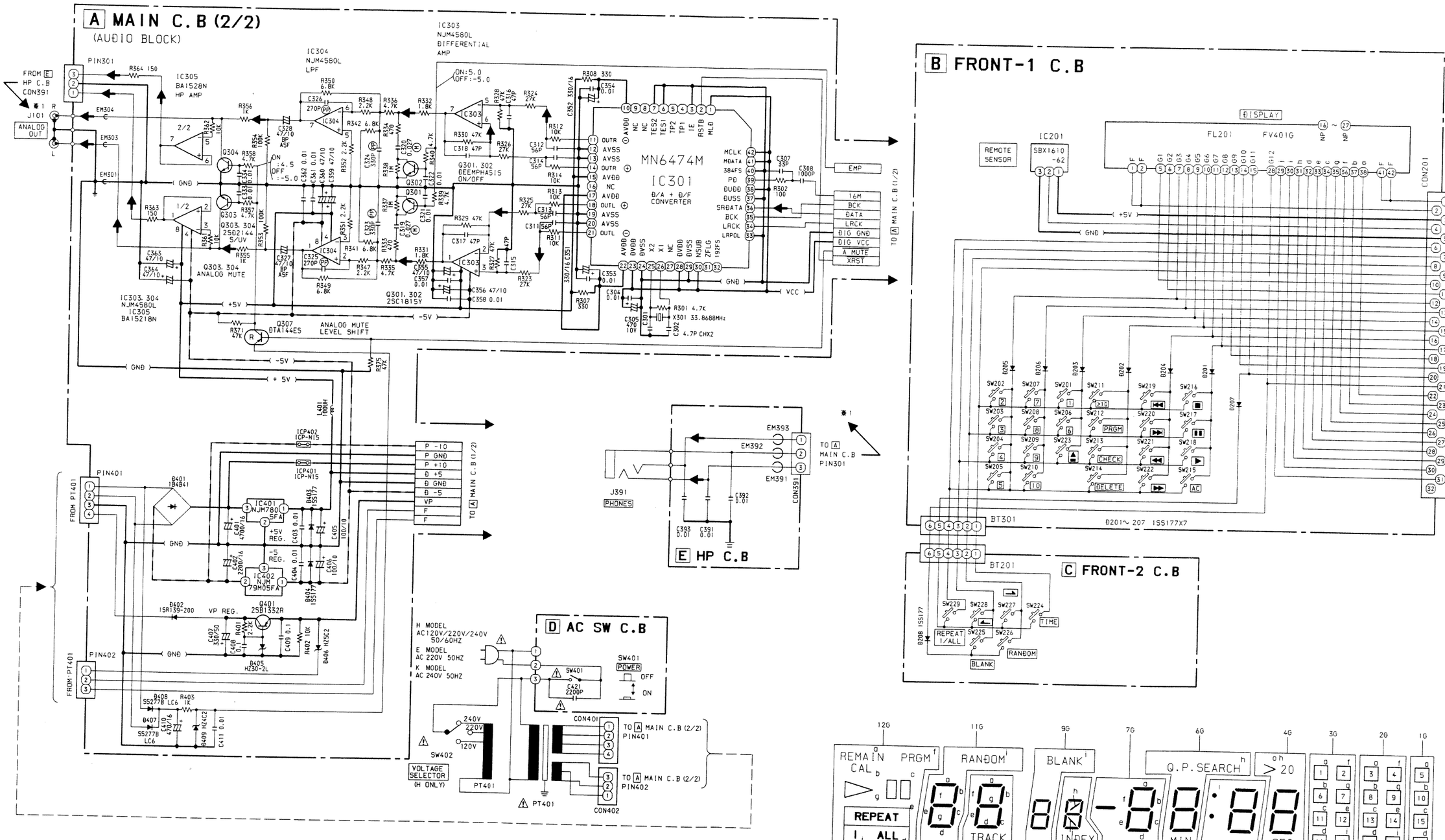
SKIP
SW220 ▶▶|
SW219 |◀◀

SW229	SW228	SW227	SW226	SW225	SW224
REPEAT 1/ALL	▶	◀	RANÐOM	BLANK	TIME

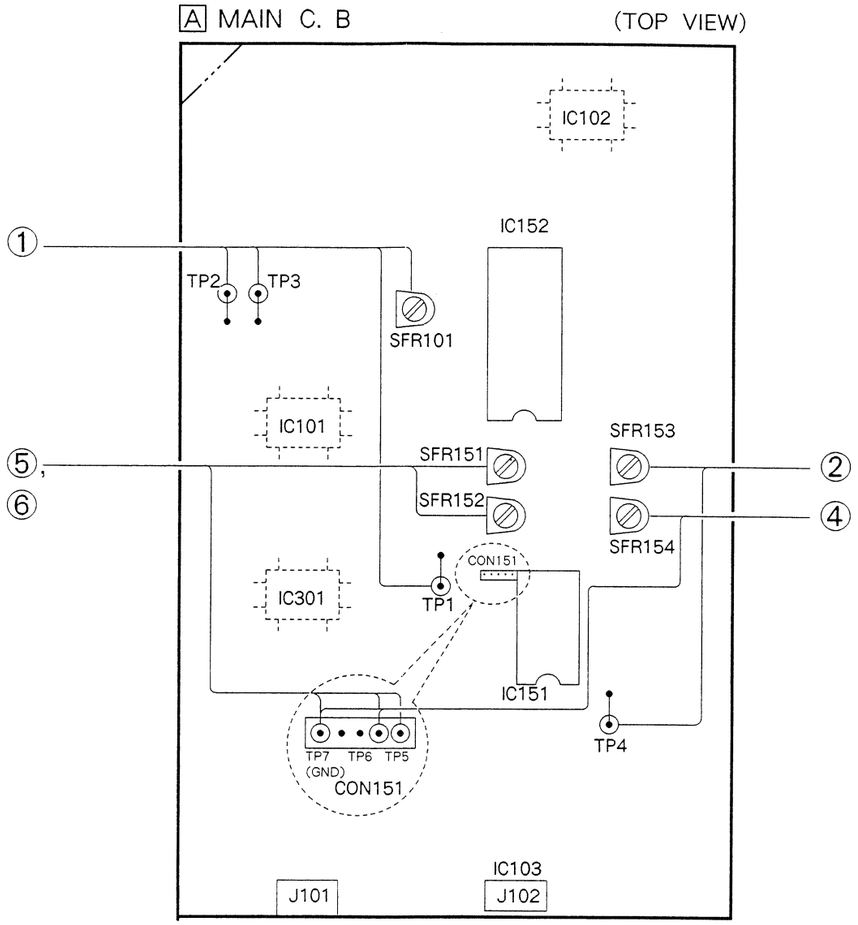
INÐEX

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

(プリント基板内のケミコンの極性表示はθ表示です。)


A MAIN C.B (2/2)
(AUDIO BLOCK)
IC303 NJM4580L DIFFERENTIAL AMP
IC304 NJM4580L LPF
IC305 BA15218N HP AMP
MN6474M IC301 D/A + D/F CONVERTER
Q301, 302 DEEMPHASIS ON/OFF
Q303, 304 2SD2144 S/UV
Q303, 304 ANALOG MUTE
Q301, 302 2SC1815Y
Q307 DTA144ES ANALOG MUTE LEVEL SHIFT
IC303, 304 NJM4580L
IC305 BA15218N
FROM E HP C.B CON391
PIN301
ANALOG OUT
J101
EM304
EM303
EM301
GND
+5V
-5V
VCC
EMP
16M
BCK
DATA
LRCK
DIG GND
DIG VCC
A MUTE
XRST
TO A MAIN C.B (1/2)
FROM PT401
PIN401
PIN402
IC401 NJM7805FA
IC402 NJM 79M05FA
+5V REG.
-5 REG.
VP REG.
Q401 2SB1332R
P -10
P GND
P +10
D +5
D GND
D -5
VP
F
F
TO A MAIN C.B (1/2)
E HP C.B
EM393
EM392
EM391
CON391
J391
PHONES
TO A MAIN C.B PIN301
D AC SW C.B
H MODEL AC120V/220V/240V 50/60HZ
E MODEL AC 220V 50HZ
K MODEL AC 240V 50HZ
SW401 POWER OFF ON
SW402 VOLTAGE SELECTOR (H ONLY)
240V 220V 120V
PT401
CON401
CON402
TO A MAIN C.B (2/2) PIN401
TO A MAIN C.B (2/2) PIN402
B FRONT-1 C.B
DISPLAY
FL201 FV401G
IC201 SBX1610-62
REMOTE SENSOR
CON201
FROM A MAIN C.B CON104
SW202 SW207 SW201 SW211 SW219 SW216
SW205 SW208 SW206 SW212 SW220 SW217
SW204 SW209 SW223 SW213 SW221 SW218
SW205 SW210 SW214 SW222 SW215
PRGM
CHECK
DELETE
AC
D205 D206 D203 D202 D204 D201 D207
BT301
D201~207 1SS177X7
C FRONT-2 C.B
BT201
SW229 SW228 SW227 SW224
SW225 SW226
REPEAT 1/ALL
TIME
RANDOM
BLANK
D208 1SS177

12G
11G
9G
7G
6G
4G
3G
2G
1G
REMAIN
CAL
PRGM
RANDOM
BLANK
Q.P.SEARCH
>20
REPEAT
ALL
TRACK
INDEX
MIN
SEC
10G
8G
5G



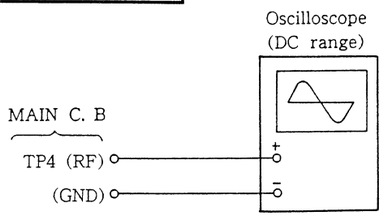
Note : Connect a probe (10 : 1) of the frequency counter or the oscilloscope to a test point.

① VCO Frequency Adjustment

1. Connect and short between TP1 and CHASSIS (GND).
2. Connect the frequency counter to test points TP2 (VCO) and TP3 (GND).
3. Adjust SFR101 (VCO) so that the frequency counter reading is 4.40 ± 0.01 MHz.
4. After the adjustment is completed, remove the short lead wire from TP1 and CHASSIS (GND).

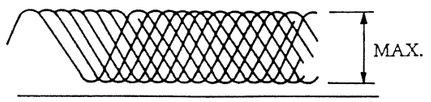
② Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.



1. Connect an oscilloscope to test points TP4 (RF) and GND.
2. Turn on the power switch.
3. Insert test disc YEDS-18 (YEDS-1) and play back the second composition.
4. Adjust SFR153 (F.B) so that the amplitude of waveform on the oscilloscope is maximized.

RF signal waveform



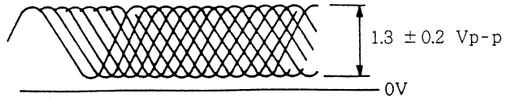
VOLT/DIV : 50 mV
TIME/DIV : 0.5 μS

③ RF Waveform Check

This check should be performed whenever the optical block is repalced in repair.

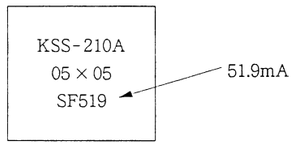
1. Connect an oscilloscope to test points TP4 (RF) and GND.
2. Turn on the power switch.
3. Insert test disc YEDS-18 (YEDS-1) and play back the second composition.
4. Check that the waveform appears as shown in the figure below.

RF signal waveform



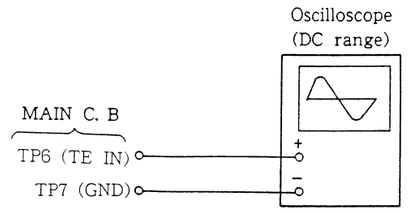
VOLT/DIV : 50 mV
TIME/DIV : 0.5 μS

Note : The current of the laser signal can be checked with the voltages on both sides of R171 (22 Ω). The difference for the specified value shown on the label must be within ± 6.0 mA.

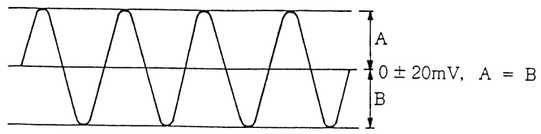


$$\text{Laser current Iop} = \frac{\text{Voltage across R171}}{22\ \Omega}$$

④ Tracking Balance Adjustlment



1. Connect an oscilloscope to TP6 (TE IN), TP7 (GND).
2. Connect center pin SFR152 (TE) to ground.
3. Turn on the power switch.
4. Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ▶ PLAY button.
5. Adjust SFR154 (T.B) so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.



VOLT/DIV : 50mV
TIME/DIV : 2mS

6. After adjustment, remove the grounding lead wire.

⑤, ⑥. Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

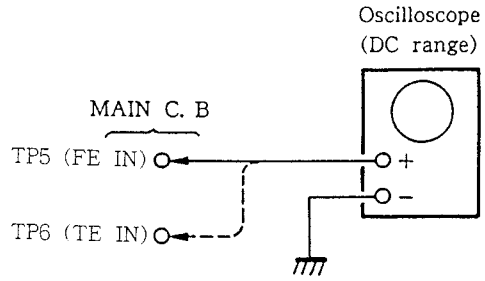
Symptoms \ Gain	Focus	Tracking
● The time until music starts becomes longer for STOP→▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● MUSIC does not start and disc continues to rotate for STOP→▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.)	–	low
● Disc table opens shortly after STOP→▶ PLAY.	low or high	–
● Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
● More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

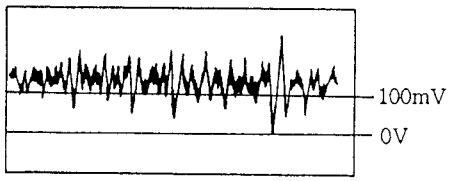
-Simple Adjutment-

Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procefure :



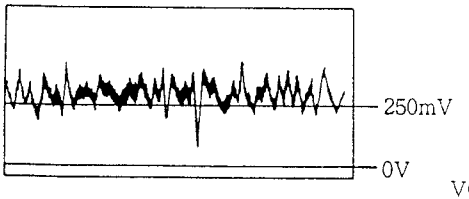
1. Keep the set horizontal.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Insert the disc YEDS-18 (YEDS-1) TRACK No.2 and press the ▶PLAY button.
3. Connect an oscilloscope to TP5 (FE IN).
4. Adjustment SFR151 (FE) so that the waveform is as shown in the figure below.
   (focus gain adjustment)



VOLT/DIV : 10mV
TIME/DIV : 2mS

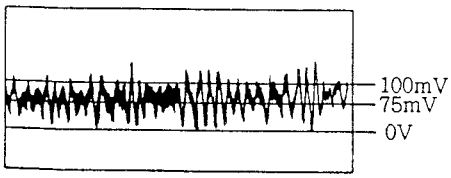
● Incorrect Examples (DC level changes more than on -adjusted waveform)

low focus gain



VOLT/DIV : 10mV
TIME/DIV : 2mS

high focus gain



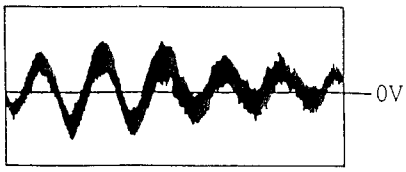
VOLT/DIV : 10mV
TIME/DIV : 2mS

5. Connect an oscilloscope to TP6 (TE IN).
6. Adjust SFR152 (TE) so that the waveform is as shwon in the figure below.
   (tracking gain adjustment)

VOLT/DIV : 50mV
TIME/DIV : 2mS

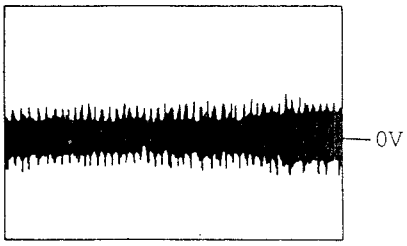
● Incorrect Example (fundamental wave appears)

low tracking gain



VOLT/DIV : 50mV
TIME/DIV : 2mS

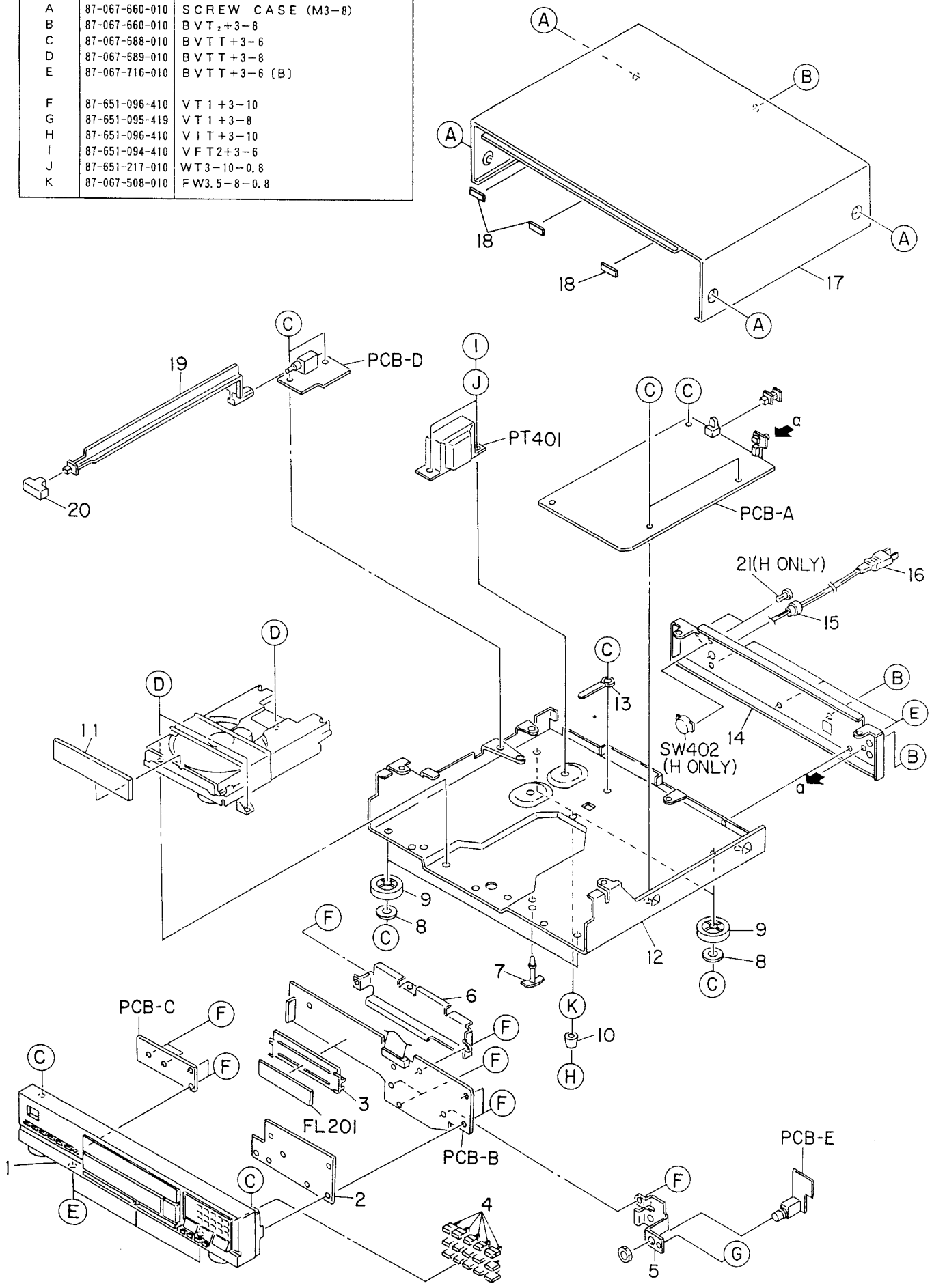
high tracking gain
(higher fundamental wave than for low gain)



VOLT/DIV : 50mV
TIME/DIV : 2mS

EXPLODED VIEW – 1

REF. NO.	PART NO.	DESCRIPTION
A	87-067-660-010	SCREW CASE (M3-8)
B	87-067-660-010	BVT2+3-8
C	87-067-688-010	BVTT+3-6
D	87-067-689-010	BVTT+3-8
E	87-067-716-010	BVTT+3-6 (B)
F	87-651-096-410	VT1+3-10
G	87-651-095-419	VT1+3-8
H	87-651-096-410	VIT+3-10
I	87-651-094-410	VFT2+3-6
J	87-651-217-010	WT3-10-0.8
K	87-067-508-010	FW3.5-8-0.8

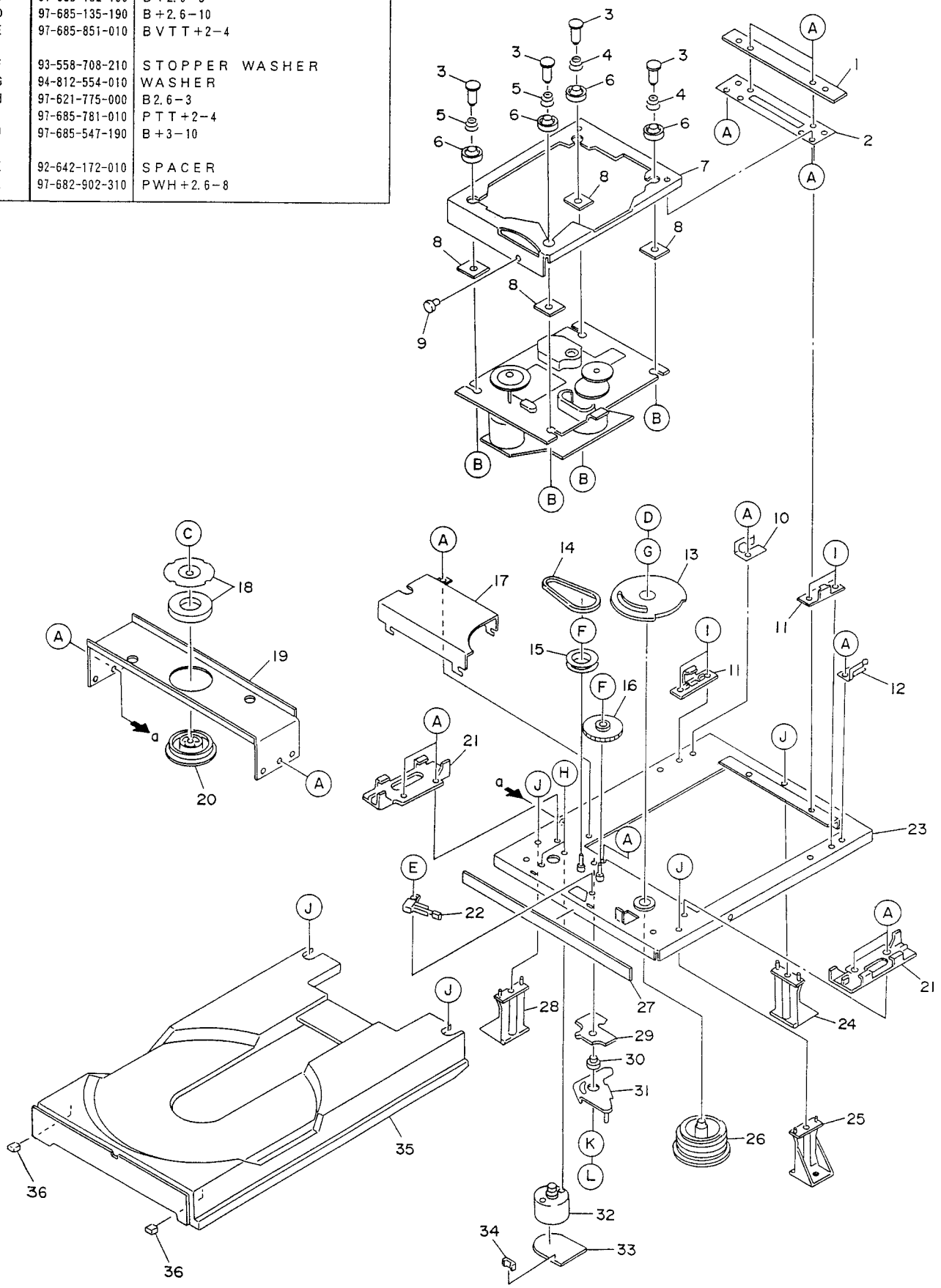


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1-1	★09-057-082-010	CABINET,FRONT ASSY	※	1
	1-2	★89-AC1-206-010	CUHSION,70-150-1		1
	1-3	★89-AC2-201-019	GUIDE,FL		1
	1-4	★84-761-014-019	BUTTON,PUSH 10KEY		15
	1-5	★89-AC1-203-019	HOLDER,HP (H)		1
	1-5	★89-AC1-210-010	HOLDER,HP (E,K)		1
	1-6	★89-AC1-202-019	HOLDER,FRONT (H)		1
	1-6	★89-AC1-209-018	HOLDER,FRONT (E,K)		1
	1-7	---	PCB HOLDER LSR-12R		1
	1-8	★84-761-008-010	CUSHION FOOT		4
	1-9	★84-738-022-010	FOOT		4
	1-10	★87-085-208-010	FOOT ASSY		1
	1-11	★80-AC4-004-119	PANEL,TRAY	※	1
	1-12	---	CHASSIS,AMP		1
	1-13	---	WIRE BINDER		1
	1-14	★80-AC4-009-019	PANEL,REAR (H)	※	1
	1-14	★80-AC4-010-010	PANEL,REAR (E)	※	1
	1-14	★80-AC4-011-010	PANEL,REAR (K)	※	1
	1-15	★87-085-184-010	BUSHING,AC CORD D (H)		1
	1-15	★87-085-185-010	BUSHING,AC CORD E (E,K)		1
	1-16	★87-034-749-019	AC CORD (H)		1
	1-16	★87-034-781-018	AC CORD (E)		1
	1-16	★87-034-592-018	AC CORD (K)		1
	1-17	★80-AC4-007-019	CABINET,STEEL (H)	※	1
	1-17	★80-AC3-011-010	CABINET,STEEL (E,K)		1
	1-18	★84-736-229-010	CLOTH,20-15-0.5		3
	1-19	★84-761-207-119	ROD		1
	1-20	★84-761-024-019	BUTTON,PUSH POWER		1
	1-21	87-084-098-019	RIVET,NYLON (H)		2

EXPLODED VIEW – 2

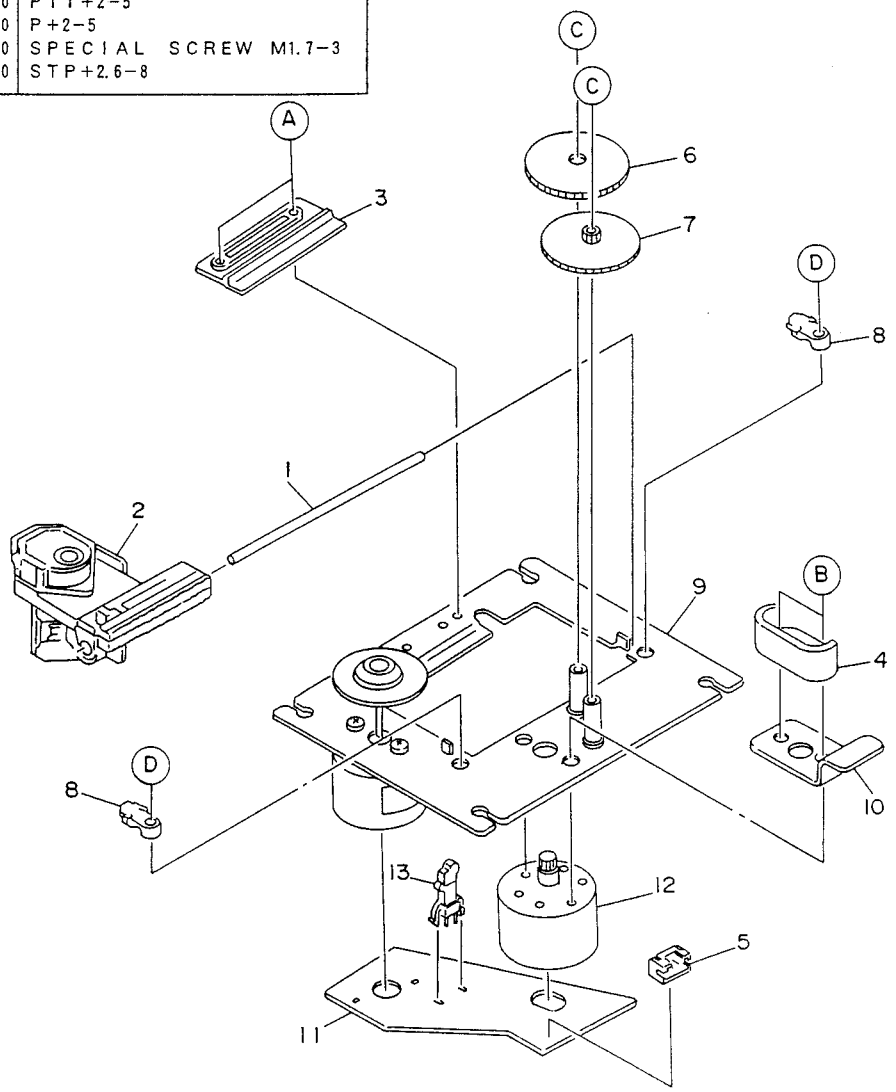
REF. NO.	PART NO.	DESCRIPTION
A	97-685-862-010	B V T T +2.6-6
B	97-642-142-010	S C R E W
C	97-685-132-190	B +2.6-5
D	97-685-135-190	B +2.6-10
E	97-685-851-010	B V T T +2-4
F	93-558-708-210	S T O P P E R W A S H E R
G	94-812-554-010	W A S H E R
H	97-621-775-000	B2.6-3
I	97-685-781-010	P T T +2-4
J	97-685-547-190	B +3-10
K	92-642-172-010	S P A C E R
L	97-682-902-310	P W H +2.6-8



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	2-1	★92-642-170-010	HOLDER, HINGE		1
	2-2	★92-642-164-010	SPRING, HINGE		1
	2-3	★92-642-160-010	SHAFT, SPRING T		4
	2-4	★92-642-137-010	SPRING, COIL B		2
	2-5	★92-642-139-010	SPRING, COIL A		2
	2-6	★92-642-158-010	FOOT, C		4
	2-7	★9X-264-210-510	SPRING SUB CHASSIS ASSY		1
	2-8	★92-642-159-010	PLATE, SPRING T		4
	2-9	★92-642-169-010	ROLLER		1
	2-10	★92-642-147-010	GUIDE, TRAY L		1
	2-11	★92-042-102-030	HOLDER, TRAY		2
	2-12	★92-642-146-010	GUIDE, TRAY R		1
	2-13	★92-642-154-020	GEAR, SPRING DRIVE		1
	2-14	93-053-307-010	BELT, LM		1
	2-15	★94-913-731-010	PULLEY, ROADING		1
	2-16	★92-642-148-010	GEAR, SPRING RELAY		1
	2-17	★92-642-149-010	COVER, SPRING GEAR		1
	2-18	9X-264-210-810	MAGNET ASSY		1
	2-19	★92-642-165-010	CHASSIS, CHUCK		1
	2-20	★92-642-181-010	PULLEY, CHUCKING		1
	2-21	★92-642-161-010	HOLDER, FRONT TRAY		2
	2-22	★91-572-052-110	SWITCH, LEAF (OPEN/CLOSE)		1
	2-23	★9X-264-210-610	SPRING MAIN CHASSIS ASSY		1
	2-24	★92-642-512-010	HOLDER, MD BOSS REAR		1
	2-25	★92-642-510-010	HOLDER, MD BOSS		1
	2-26	★92-642-153-010	CAM, SPRING CONTROL		1
	2-27	★92-642-157-030	TAPE, FRONT		1
	2-28	★92-642-511-010	HOLDER, MD BOSS L		1
	2-29	★92-642-173-010	PLATE, RING		1
	2-30	★92-642-133-020	BOSS		1
	2-31	★9X-264-210-910	STOPPER RING ASSY		1
	2-32	★9X-264-133-610	MOTOR ASSY (LOADING)		1
	2-33	★91-624-793-210	CD MOTOR 2 C.B		1
	2-34	★91-564-721-110	CONNECTOR, PIN 5P		1
	2-35	★92-642-156-010	TRAY		1
	2-36	★92-642-125-010	DAMPER		2

EXPLODED VIEW – 3

REF. NO.	PART NO.	DESCRIPTION
A	92-641-386-010	PTT+2-5
B	97-621-255-350	P+2-5
C	93-303-809-310	SPECIAL SCREW M1.7-3
D	92-641-447-010	STP+2.6-8



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★94-910-431-010	SHAFT, SLIDE		1
	3-2	98-848-127-310	PICK UP (KSS-210ASRP)		1
	3-3	★92-641-443-020	HOLDER, SLIDE		1
	3-4	★92-641-434-010	COVER, GEAR		1
	3-5	★92-564-720-110	CONNECTOR, PIN		1
	3-6	★92-641-404-020	GEAR, A		1
	3-7	★92-641-403-050	GEAR, B		1
	3-8	★92-641-448-020	CLAMP, SHAFT		2
	※ 3-9	9X-264-133-710	SP MOTOR ASSY (W/CHASSIS, T.T)(DISC)(RF-310T-11400)		1
	※ 3-9	9X-264-134-810	SP MOTOR ASSY (W/CHASSIS, T.T)(DISC)(MDN-4RA3NTAS)		1
	3-10	★92-641-371-010	STOPPER		1
	※ 3-11	★91-625-848-110	CD MOTOR 1 C.B (RF-310T-11400)		1
	※ 3-11	★91-628-263-110	CD MOTOR 1 C.B (MDN-4RA3NTAS/4RA3ETA)		1
	※ 3-12	9X-264-077-010	SLED MOTOR GEAR ASSY (SLED)(RF-310T-11400)		1
	※ 3-12	9X-264-134-410	SLED MOTOR GEAR ASSY (SLED)(MDN-4RA3ETA)		1
	3-13	91-572-053-110	SWITCH, LEAF (LIMIT)		1

※Caution
Two Types of the spindle (DISC) motor and sled motor are used, but they are not compatible.
Check the part numbers (MDN ••••, RF ••••) on the labels of motors and replace motors with the same one.